DOCUMENT RESUME

ED 189 176 TM 800 358

AUTHOR Eash, Maurice J.: And Others
TITLE Assessment of Multiple Outcomes: An Evaluation Research Study of a Compensatory Early Childhood Program (Child Parent Centers and Child Parent Expansion Program).
PUB DATE Apr 80
NOTE 22p.: Paper presented at the Annual Meeting of the American Educational Research Association (64th, Boston, MA, April 7-11, 1980).

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Academic Achievement: Attendance: Birth Order: *Compensatory Education: Disadvantaged Youth: *Early Childhood Education: Family Environment: Locus of Control: Longitudinal Studies: *Parent Participation: *Program Evaluation: Research Design: Siblings
IDENTIFIERS *Child Parent Expansion Program: Comprehensive Tests of Basic Skills: Elementary Secondary Education Act Title I: Iowa Tests of Basic Skills: *Parent Child Centers

ABSTRACT

Child Parent Centers (CPC) have been established in selected disadvantaged areas to provide systematic educational experiences for preschool children as young as three years of age. This study provides an update on the current state of the CPC and its latest adaption, the Child Parent Expansion (CPX) Program. A three-year, longitudinal evaluation was designed. This paper reports on the first year of the evaluation, and involves the comparison of five and eight-year-olds, to controls on measures of reading and mathematics achievement, locus of control, parent interview-based measures of home educational environment, school attendance, number of siblings, and birth order. The major findings concern the effects on achievement of the CPC treatment as compared to the regular school experience for the two age groups. Short-and long-term effects of participation on the quality of home environment are shown, and home environment was found to be significantly related to achievement. Implications are drawn concerning CPC program development and program policy, as well as the conduct of evaluation studies. (Author/GSK)

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Assessment of Multiple Outcomes:

An Evaluation Research Study of a Compensatory Early Childhood Program

(Child Parent Centers and Child Parent Expansion Program)

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Maurice J. Eash
Geneva D. Haertel
Ernest T. Pascarella
Kendon J. Conrad
Barbara K. Iverson
Walter P. Vispoel

University of Illinois
at Chicago Circle

TM 800358

Presented at the Annual Meeting of the American Educational Research Association
Boston, Massachusetts
April, 1980

Overview and Objectives

This paper summarizes an evaluation research study of an early childhood program in a large city. Child Parent Centers have been established in certain disadvantaged areas to provide systematic educational experiences for preschool children as young as three years of age. The objective of this study is to provide an update on the current state of the Child Parent Center (CPC) and its latest adaptation, the Child Parent Expansion (CPX) Program. In the process, the study is designed to contribute to a better understanding of the practice of at least one phase of early childhood compensatory education.

Rationale and Description of the Child Parent Centers

The rationale underlying the Child Parent Centers is fundamentally similar to that of other early childhood compensatory education programs, most notably Headstart and Follow Through. Like these two massive programs, the CPC intends to break the cycle of poverty through an early (age three through eight), intense, systematic, and continuous educational intervention. The distinguishing characteristics of CPC's, however, are their emphasis upon direct parental involvement in the schools and a structured language/basic skills program. The CPC's also provide a wide range of educational materials, a reduced class size, improved nutrition and health care.

Child Parent Centers, funded under the aegis of ESEA Title I, were begun in the city in 1967. These locally developed centers were designed

to meet the needs of disadvantaged communities. The CPC's, each of which is affiliated with an established public elementary school serving as a parent school, provide the following materials and services:

1. Parents or guardians are asked to spend the equivalent of two days (four half-days) a month at the center because parent participation is considered an integral part of the curriculum design.
2. Half-day classes are held for an average membership of seventeen pupils per class, age three through kindergarten.
3. Audiovisual equipment and culturally oriented materials, geared to the levels of the participating pupils, are in all of the centers.
4. Pupils participating in the activity in the morning session are provided with a breakfast and lunch at the center, and pupils attending the afternoon session are served a snack.
5. The centers are administered by the principal of the parent school to which the CPC is affiliated.
6. Each center is assigned one teacher and one teacher aide for each class.
7. Each center is also assigned the following: a parent-resource teacher, a school community representative, a school clerk, and a janitor. One head teacher, freed of classroom duties, is provided at each center.
8. The centers share the services of speech therapists, social workers, school nurses, licensed practical nurses, and health aides in the parent schools.

The Child Parent Expansion Program

From 1967 until 1977 the CPC's served preschool to third grade. In 1977 the program was discontinued at the first, second, and third grades. However, on the basis of favorable findings from prior evaluations (Stenner, 1974; Eash & Rasher, 1976) the Illinois Office of Education recommended and the state legislature provided funds for compensatory programs beyond kindergarten through the third year. Vertical expansion of the CPC program into designated classes of the affiliated (parent) schools was begun in 1978. The program would expand year by year until it encompassed grade three in 1981.

A special adaptation of the Child Parent Expansion Program (CPX) was estabilished in six selected parent schools in September, 1978. This expansion involved the immediate extension of CPC treatment to include age cycles six, seven, and eight. The four parent schools included in this present study were involved in the immediate expansion program. Probably the most notable difference between the CPC and the CPX is that class size goes from seventeen in the CPC to twenty-five in the CPX. Otherwise, services and resources are designed to remain at the same level.

Evaluation of Child Parent Centers

A number of evaluations of the educational effects of the CPC's have been conducted (e.g., Stenner, 1974; Eash & Rasher, 1976; Fuerst, 1977). Due to the limitations of time, resources, expertise and purpose, however, the existing evaluations share a number of weaknesses:

1. Often they have been cross-sectional, one-shot studies which lacked meaningful measures of prior student achievement

(e.g., Stenner, 1974 had longitudinal data but did not control for prior achievement in estimating treatment effects).

2. They have often lacked control groups; relying instead on comparisons with national norms. Without control groups it has been difficult to attribute effects unambiguously to the CPC experience.
3. They have analyzed achievement outcomes almost exclusively, neglecting other important components of learning.
4. They have generally failed to document the nature of or the degree of implementation of CPC treatment versus conventional treatment.
5. The evaluations have been conducted by or sponsored by the same agencies which fund and direct the program rather than by independent agencies.

There is a continuing need for evaluative data to inform practice and guide funding. Further, the effects of the CPC's need to be clearly assessed, if educational contributions from this large investment of time, capital, and human energy, are to be extended to a larger population.

In an effort to address these needs, a three year, longitudinal evaluation was designed. In this evaluation, measures were sought on: academic achievement, home support for academic achievement (Dolan, 1978), instructional treatment (not included in this paper), locus of control (Crandall, 1965), and a number of status variables (e.g., attendance, family size). The study employs a quasi-experimental, nonequivalent control group design which uses multiple regression procedures to control for differences in pretreatment achievement.

Method

This paper is a report on the first year of the proposed three year longitudinal evaluation of selected Child Parent Centers in a large mid-western city. The three year evaluation design involves the comparison of two populations (treatment vs. control) for each of two age cohorts, five year olds and eight year olds.

First, five year old children currently enrolled in CPC's (with one to three years of CPC experience) will be compared to similar children (that is, living in the same disadvantaged community) in regular classrooms. Measures of achievement, attendance, number of siblings, birth order, and home support will be collected during each of the three years of the proposed evaluation.

The second comparison will be of students at the third grade level (eight year olds) who have had prior CPC experience to students at the same level who have attended regular classrooms. The majority of eight year olds with prior CPC experience are currently enrolled in expansion (CPX) classrooms, while the other eight year olds in the sample are in regular eight year old classrooms. The purpose of this comparison is to help assess the long range effects of participation in CPC's and CPX's on students. Measures to be collected for the eight year old sample during each of the three years will be the same as the five year olds, with the addition of data on locus of control. In addition to the measures just described, a sample of classroom observations will be conducted in CPC, CPX and regular classrooms for both age groups during succeeding years of the study to document the instructional treatment of CPC/CPX classrooms versus regular classrooms. The instructional treatment data are not included in this report. The general goal of the evaluation is

to assess the impact of CPC experience on student growth controlling for initial differences.

Variables

Table I lists the evaluation instruments. Outcome measures used were: the Comprehensive Tests of Basic Skills (CTBS, 1973), the Iowa Test of Basic Skills (ITBS, 1972), a measure of locus of control called the "Intellectual Achievement Responsibility Questionnaire" (IAR, 1965) and an educational home support interview by Dolan (1978).

The CTBS is the instrument provided under Title I to assess achievement in CPC's at the kindergarten level. In addition to the test administered in CPC's, tests were provided for all regular kindergarten classrooms included in the study. The Level A battery contains eight tests: Letter Forms, Letter Names, Listening for Information, Letter Sounds, Visual Discrimination, Sound Matching, Language, and Mathematics. In addition, two area scores are reported: Alphabet Skills and Visual and Auditory Discrimination. Pre-Reading Total is the sum of all individual scores excluding Mathematics.

Six subscales of the ITBS were used in the study: Vocabulary, Reading Comprehension, Spelling, Word Analysis, Math Concepts, and Math Problems. Math total scores, calculated by summing the Math Concepts and Math Problems subscores were also reported. In addition, total achievement scores, computed by taking the mean of Reading Comprehension, Vocabulary, Math Concepts and Math Problems subscores, were used in several of the analyses.

The IAR questionnaire, which measures the degree to which students accept responsibility for their own intellectual progress, was also administered orally to eight year olds. The measure is considered an

Table I

Evaluation Instruments*

Five-Year-Olds (Kindergarten)	Eight-Year-Olds (Grade 3)
Achievement: Comprehensive Tests of Basic Skills	Achievement: Iowa Test of Basic Skills

Attendance
First born
Sibling pool size
Sex

_____ _____ _____ _____ _____ _____

Home support interview

Sample questions:

1. What type of high school program would you like your child to be in?
   ____A. College Prep.
   ____B. Vocational
   ____C. Fine Arts
   ____D. Haven't thought about it.

2. Do you encourage conversation about your child's school at the dinner table?
   _____A. Yes
   _____B. No

_____ _____ _____ _____ _____ _____

Locus of Control: "Why Things Happen"

Examples:

1. Students get poor grades in school
____A. because they didn't study, or
____B. because the work is too hard.

2. If a teacher passes you to the next grade, would it probably be
____A. because the teacher liked you
____B. because of the work you did?

* The measures within the box were collected for both age cohorts.

assessment of locus of control with regard to academic performance. One score is reported, Locus of Control Total, which reflects the extent to which students assume responsibility for both positive and negative events.[1] The items were read to students, as recommended by the authors for children below grade five.

The interview by Dolan assesses the degree of home support for academic achievement. Administered to a subsample of parents for both the five and eight year olds, one total score is reported.[2]

The chief independent variable of interest in the present study was the treatment, that is, CPC and CPX experience. Students without previous CPC/CPX experience were the controls. In addition to the treatment, however, sex, firstborn, attendance and total number of siblings were included as independent variables in some of the analyses. Although home support and locus of control total were used primarily as dependent measures, they appear in several analyses as independent variables.

Organization

The sample of children included in the study was drawn from four elementary (parent) schools plus associated Child Parent Centers and two additional (control) elementary schools, all in similar neighborhoods in close proximity. All of the schools and CPC's serve predominantly black, low income populations (see Table 2). Generally,

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[1]The authors report test-retest reliability coefficients for third and fifth grades of .69 for this score.

[2]Dolan reports a test-retest reliability of .74 and internal consistency coefficients ranging from .68 to .79.

Table 2

Student Racial Composition and Percentage of Students from Low Income Homes for Schools Included in the Evaluation of Child Parent Centers

	Percent Black[a]	Percent Low Income[b]
A. Parent school with CPC	99	83.27
B. Parent school with CPC	74	66.76
C. Parent school with CPC	99	54.07
D. Parent school with CPC	99	60.26
E. Control school	100	72.01
F. Control school	100	66.47

[a] Demographic data from Selected School Characteristics 1973-74 - 1977-78; prepared by the Department of Administration.

[b] Percentage of Students from Low Income Homes. The percentage indicated is based on the information in the Annual Full Enrollment and Housing Report. The data are determined by federal census data and the percent from low income families as reported by the State of Illinois.

achievement in this area, as shown by standardized tests, is below national norms.

The sample for this evaluation included all five year olds in the six elementary schools (N=304) and the four CPCs (N=227). No eight year olds were enrolled in the CPCs. Most eight year olds with previous CPC experience were enrolled in expansion classrooms in the four parent schools. All eight year olds in expansion classrooms (N=54) were included in the study. In addition, all eight year olds enrolled in regular third grade classrooms in the six elementary schools were tested (N=425).

All measures except the home interview were group administered or were obtained from school records. Home interviews were administered to parents by School-Community Representatives on an individual basis. Each interview took approximately one hour to complete. Because interview data were so costly to collect, random samples of the five year old and eight year old treatment and control groups were selected to receive interviews (N=121).

It should be noted that enrollment in the CPC program was voluntary and required a continuing commitment on the part of parents of enrolled children. For these reasons the equivalence of CPC and control groups at both age levels cannot be assumed.

Statistical Analysis

Multiple regression analysis of covariance was the major analytical procedure used. For the five year old sample each reading and mathematics achievement measure was regressed on student sex, birth order, family size and days absent (treated as covariates) and a dummy coded variable representing

CPC versus control group membership. CPC members were coded 1 while the control group members were coded 0.

The variables were entered in the regression equations in a setwise manner. The set of covariates were entered first followed by the dummy variable representing CPC versus control group exposure. Standardized partial regression coefficients (or beta weights) were employed to represent the contribution of individual variables to prediction with the influence of all other variables in the equation held constant statistically.

The analysis of the data from the eight year old sample proceeded in essentially the same manner. The one exception was the addition of Locus of Control as a covariate in the prediction of each achievement measure. Locus of control was also regressed on each of the other covariates and the dummy treatment variable to determine if it was significantly and positively associated with CPC exposure.

Because home support data were not available for most students, the measure of home support was not included in the regressions. However, independent t-tests were performed comparing home support scores for CPC versus regular kindergarten 5 year olds, and for Expansion versus regular third grade 8 year olds.

Results

The major findings of the study concern the effects on achievement of CPC treatment as compared to the regular school experience for our two age cohorts, eight year olds and five year olds. Using multiple regression, achievement scores were compared from the ITBS for the 30 expansion children (eight year olds) and the 288 control children (eight year olds) for whom

complete data were available. For all subtests of the ITBS, the regression coefficient for expansion vs. control was greater than zero, indicating a positive effect of expansion classroom participation (See Table 3). The beta weights for Vocabulary, Spelling, and Word Analysis are positive but not statistically significant; whereas those for Reading Comprehension, Mathematics Concepts, Mathematics Problems and Mathematics Total are statistically significant at the .05 level. These findings indicate significant differences not in the areas where recall is the dominant cognitive function (Vocabulary and Spelling); but, rather, in those areas where interpretation and application are most important (Reading Comprehension and Mathematics Concepts).

It was also found that expansion students demonstrated a significantly higher internal locus of control ($p < .01$) when compared to students in regular schools. Further, it was found that higher internal locus of control is very strongly related to increased achievement. This is demonstrated by significant beta weights for locus of control in the regressions for all ITBS subscales. Although we may not be able to infer causality at the present time, longitudinal analyses in years two and three of the study may permit stronger inferences concerning the importance of this variable. These findings clearly support the findings of other studies relating locus of control to achievement (deCharms, 1972; Reimanis, 1971; Messer, 1972).

A related finding is that family size has an inverse relationship with locus of control, possibly indicating that the amount of attention that parents are able to give to individual children is responsible in some degree for a higher sense of internal control.

Table 3

Total R^2 and Beta Weights for Eight Year Old Achievement Measures[a] and Locus of Control[b]

	Vocabulary	Reading Comprehension	Spelling	Word Analysis	Mathematics Concepts	Mathematics Problems	Mathematics Total	Locus of Control
R^2 TOTAL	.25**	.28**	.18**	.19**	.31**	.27**	.31**	.06**
Sex	.09	.06	.22	.10	.08	.12*	.11*	.01
Previous CPC Experience	.05	.07	.03	.05	.15*	.10	.13	.06
First Born	-.01	-.04	-.14	.003	.04	.04	.04	.05
Number of Siblings in Family	.02	-.01	-.05	-.05	-.04	.01	-.01	-.17**
Locus of Control	.37**	.37**	.24**	.24**	.41**	.42**	.44**	---
Days Absent	-.30**	-.27**	-.11	-.25**	-.28**	-.20**	-.25**	-.03
Expansion of CPC Treatment vs. Control	.05	.18*	.09	.16	.18*	.15*	.17*	.21**
N of cases	289	288	166	207	289	289	289	302

* $p < .05$
** $p < .01$

[a] Iowa Test of Basic Skills

[b] Coded 1 = CPC; 0 = control

Achievement data for five year olds were obtained using the CTBS. In the five year old sample (Table 4), the relationship between CPC treatment and achievement is even more pronounced. As was the case for the eight year old sample, regression coefficients for all subscales were positive. On the scales involving composite scores, Total Discriminating, Pre-Reading Total, and Mathematics, the effect of CPC participation is significant at the .01 level.

Table 5 shows the results of independent t-tests comparing mean home support scores for treatment and control children at each age level. Among 8 year olds, home support scores were significantly higher ($p<.05$) for those in expansion classrooms. While the difference at the 5 year old level was in the expected direction, it did not reach the .05 level of significance.

Table 5

Comparisons of Home Support Scores for CPC and Expansion Participants vs. Control

Age	t-value	df	p <
5	1.64	59	n.s.
8	2.25	59	.05

Discussion

The first year of a longitudinal evaluation of CPCs incorporating multiple outcome measures has been described. The analyses reported suggest positive effects of CPC and expansion classroom participation on a range of achievement measures, as well as locus of control and home support for learning. Caution must be observed, however, in interpreting these findings

Table 4

Total R^2 and Beta Weights for Five Year Old Achievement Measures[a]

	Letter Forms	Letter Names	Alphabet Skills	Listening for Information	Letter Sounds	Visual Discrimination	Sound Matching	Total Discriminating	Language	Pre-reading Total	Mathematics
R^2 TOTAL	.08**	.07**	.09**	.04**	.07**	.13**	.07**	.12**	.007	.08**	.10**
Sex	.003	-.03	-.01	.06	.05	-.12*	-.02	-.07	-.004	.007	.01
First Born	-.09	-.07	-.09	-.01	.004	-.07	.01	-.03	.04	-.03	-.01
Number of Siblings in Family	.05	.04	.06	-.06	.03	.07	.12	.12	-.06	.04	-.02
Days Absent	-.25**	-.23**	-.26**	-.18**	-.22**	-.24**	-.12**	-.19**	-.03	-.20**	-.24**
Child Parent Center vs. Control[b]	.12*	.12*	.13*	.07	.14*	.23**	.20**	.25**	.05	.19**	.21**
N of cases	276	277	276	278	279	283	285	283	281	270	282

* $p < .05$
** $p < .01$

[a] Comprehensive Tests of Basic Skills

[b] Coded 1 = CPC, 0 = control

because the initial equivalence of treatment and control groups was not firmly established, group differences cannot be ascribed unambiguously to CPC participation. Results reported, while encouraging, are only preliminary. In years 2 and 3 of the study, the first wave of data described in this paper, will serve as a baseline against which further gains may be assessed. These comparisons, incorporating prior (Year 1) measures of achievement will permit stronger inferences concerning the effectiveness of the CPC experience. At this time, however, the results are encouraging.

References

Anderson, Richard B., St.Pierre, Robert G., Proper, Elizabeth C., Stebbins, Linda B. Pardon us, but what was the question again?: A response to the critique of the Follow Through evaluation. Harvard Educational Review, 1978, 48, 161-170.

Bloom, Benjamin. Stability and change in human characteristics. New York: Wiley, 1964.

Campbell, Donald T., and Stanley, Julian C. Experimental and quasi-experimental designs for research. Chicago: Rand McNally & Co., 1963.

Chicago Board of Education, Illinois Department of Government Funded Programs. ESEA Title I., child-parent centers, 1972-73, final evaluation report. Arlington, Virginia: IBEX, Inc., 1974.

Chicago Board of Education, Illinois Department of Government Funded Programs. ESEA Title I, early childhood education 1973-74, final evaluation report. Arlington, Virginia: IBEX, Inc., 1975.

Chicago Board of Education, Illinois Department of Government Funded Programs. ESEA Title I, early childhood education 1974-1975, final evaluation report. Durham, North Carolina: IBEX, Inc., 1976.

Chicago Board of Education, Illinois. Final evaluation of 1975-76 ESEA Title I child-parent centers. Chicago: Author, 1977

Chicago Board of Education, Illinois Department of Government Funded Programs. Adaption - expansion of the ESEA Title I child-parent centers activity. Chicago: Author, 1978.

Chicago Board of Education, Illinois Department of Government Funded Programs. Adaption of ESEA Title I child-parent centers activity: extension of age cycle 7 & 8 in six selected parent schools. Chicago: Author, 1978.

Crandall, V. C., Katkovsky, W., and Crandall, V. J. Children's beliefs in their own control of reinforcement in intellectual-academic achievement situations. Child Development, 1965, 36, 91-109.

CTB/McGraw-Hill Comprehensive Tests of Basic Skills, Level A, Form S, Expanded Edition. Monterey, California: CTB/McGraw-Hill, 1973.

de Charms, R. Personal causation training in the schools. Journal of Applied Social Psychology, 1972, 2, 95-113.

Dolan, L. The affective consequences of home support, instructional quality and achievement. Urban Education, 1978, 13, 323-344.

Eash, Maurice J. and Rasher, Sue P. Longitudinal evaluation of Child-Parent Centers. Unpublished manuscript, University of Illinois at Chicago Circle, 1976.

Fuerst, J. S. Child parent centers: an evaluation. Integrated Education, 1977, 15, 17-20.

House, Ernest R., Glass, Gene V., McLean, Leslie D., Walker, Decker, F. No simple answer: Critique of the Follow Through evaluation. Harvard Educational Review, 1978, 48, 128-160.

Lefcourt, Herbert M. Locus of control: Current trends in theory and research. Hillsdale, New Jersey: Lawrence Erlbaum Associates, 1976.

Lindquist, E. F., Hieronymus, A. N., Hoover, H. D., Peterson, J., Whitney, [illegible], Lewis, T., Neckere, E., Strayer, F., Fry, M., Monroe, V., Humphrey, K., Billington, R., and Cohen, A. Iowa Tests of Basic Skills. Boston: Houghton Mifflin, Company, 1972.

Messer, S. B. The relation of internal-external control to academic performance. Child Development, 1972, 43, 1456-1462.

Reimanis, G. Effects of experimental IE modification techniques and home environment variables of IE. Paper presented at the American Psychological Association Convention, Washington, D.C., 1971.

Stenner, A. Jackson, and Mueller, Siegfried G. A successful compensatory education model. Phi Delta Kappan, 1973, 55, 246-248.

Westinghouse Learning Corporation/Ohio University. The Impact of Head Start: An Evaluation of the effects of Head Start on children's cognitive and affective development. Washington, D.C.: Office of Economic Opportunity, 1969. (Distributed by Department of Commerce, Clearinghouse for Federal Scientific and Technical Information, Springfield, Va.)